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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,701	01/29/2001	Toru Tatsumi	NECW 18.281	3273

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EXAMINER

TSAL, H JEY

ART UNIT PAPER NUMBER

2812

DATE MAILED: 03/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/744,701

Applicant(s)

TATSUMI ET AL.

Examiner

H. Jey Tsai

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 47-117 is/are pending in the application.
- 4a) Of the above claim(s) 57-60 and 91-117 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 47-56 and 61-90 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: \_\_\_\_\_

***Interview Must Be Made of Record***

Applicant is reminded that the substance of Interview Must Be Made of Record during the interview with examiner on Dec. 12, 2002 and subsequent interview with the supervisor of the examiner, John Niebling . A complete written statement as to the substance of any face-to-face, video conference, electronic mail or telephone interview with regard to the merits of an application must be made of record in the application, whether or not an agreement with the examiner was reached at the interview. See 37 CFR 1.133(b), MPEP § 502.03 and § 713.01 and 713.04.

The action of the U.S. Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete or accurate, the examiner may give the applicant a 1-month time period to complete the reply under 37 CFR 1.135(c) where the record of the substance of the interview is in a reply to a nonfinal Office action.

***Election/Restriction***

Claims 57-60 and 91-94 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected with traverse, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 14.

***Claim Rejections - 35 USC § 102***

Art Unit: 2812

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 47-56 are rejected under 35 U.S.C. § 102(b) as being anticipated by Greenwald 5,104,690.

Greenwald discloses a method of forming a metal oxide layer the semiconductor substrate, which includes:

introducing metal organic material (reactive) and oxidizing gas (oxygen) into chamber through separate gas inlet, see fig.3 and col. 4, lines 16+, and claim 5,

heating substrate and maintaining the total pressure of vacuum chamber at less than  $1 \times 10^{-2}$  torr (maintaining CVD reactor pressure at about  $10^{-6}$  to 760 torr).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 61-90 and 47-56 rejected under 35 U.S.C. 103(a) as being unpatentable over Moise et al. 6,211,035 or Satoh et al. 6,232,167 in view of Eguchi et al. 5,618,761.

The reference(s) teach the features :

Art Unit: 2812

Moise et al. discloses a method of forming a metal oxide on the semiconductor substrate, which includes :

forming metal oxide of  $ABO_3$  using organometal gases under first film formation condition, see figs. 11+ and col. 14, lines 16+,

carrying out film formation of perovskite type crystal structure ( $ABO_3$ ) further on the initial nuclei under second film formation condition, see col. 15, line 1+.

Satoh et al. discloses a method of forming a metal oxide on the semiconductor substrate, which includes :

forming metal oxide of  $ABO_3$  5 using organometal gases under first film formation condition, see figs. 1+ and col. 7, lines 1+,

carrying out film formation of perovskite type crystal structure ( $ABO_3$ ) 6 further on the initial nuclei under second film formation condition.

Eguchi et al. teaches vapor phase growth of metal oxide layer of  $ABO_3$  structure under pressure lower than 400 torr in col. 6, lines 56+.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Moise et al. or Satoh et al.'s process with lower pressure deposition as suggested by Eguchi et al. because a desired grain structure can be optimized under lower pressure.

Art Unit: 2812

**Any inquiry of a general nature or clerical matters or relating to the status of this application or proceeding should be directed to the Group customer service whose telephone number is (703) 306-3329 and Fax number (703) 306-5515. Group receptionist telephone number 703-308-0956.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. Jey Tsai whose telephone number is (703) 308-1374. The examiner can normally be reached on from 7:00 Am to 4:00 Pm., Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone number for this Group is (703) 308-7722.

hjt

3/12/03



H. Jey Tsai  
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Patent Examining Group 2800